

**REMARKS**

Claims 1-18 are pending in this application. By this Amendment, claims 1 and 3-18 are amended to obviate informalities and/or for better clarity, and not for substantial reasons of patentability. The Abstract and the specification are amended to obviate informalities and/or for better clarity. No new matter is added.

Applicants thank Examiner Thangavelu for the courtesy extended to Applicants' representative, Mr. Luo, during the March 8, 2005 telephone interview. At the telephone interview, Examiner Thangavelu indicated that a subsequent personal interview is not necessary. The Examiner suggested that an Information Disclosure Statement be filed to submit references to support the statement that "noise variance" is a well-known term. Accordingly, Applicants submit herewith an Information Disclosure Statement with three U.S. patents that disclose the concept of "noise variance."

**I. Formal Matters**

The Office Action objects to the Abstract, the specification and claims 4, 5, 9, 12, 13, 17 and 18. The Abstract, the specification and claims 4, 5, 9, 12, 13, 17 and 18 are amended, as the Examiner suggested and/or requested, to overcome the objection. Accordingly, withdrawal of the objection to the Abstract, the specification and claims 4, 5, 9, 12, 13, 17 and 18 is respectfully requested.

**II. The Claims Satisfy the Requirements of 35 U.S.C. §112**

The Office Action rejects claims 5-8, 13 and 18 under 35 U.S.C. §112, first paragraph. Claims 5-8, 13 and 18 are amended for better compliance with §112, first paragraph.

Regarding the term  $\sigma^2$ , Applicants respectfully submit that the noise variance of a control system is a term of art that one of ordinary skill understands. For example, U.S. Patent No. 4,775,949 to Kalata describes in detail a method for calculating a noise covariance. See col. 4, lines 14-33. The calculation involves the use of a noise variance. See col. 7, lines 9-10. Thus, it

is clear that those skilled in the art would have understood the term "noise variance" and how it may be calculated.

For at least the above reasons, withdrawal of the rejection of claims 5-8, 13 and 18 under 35 U.S.C. §112, first paragraph is respectfully requested.

The Office Action rejects claims 3, 4, 6, 7, 11 and 16 under 35 U.S.C. §112, second paragraph. Claims 3, 4, 6, 7, 11 and 16 are amended to overcome this rejection. Accordingly, withdrawal of the rejection of claims 3, 4, 6, 7, 11 and 16 under 35 U.S.C. §112, second paragraph is respectfully requested.

### **III. The Claims Define Over the Applied References**

A. The Office Action rejects claims 1, 6, 7, 9, 12, 14 and 17 under 35 U.S.C. §103(a) over U.S. Patent Application 2003/0028266 to Jacques in view of U.S. Patent Application 2003/0065409 to Raeth et al. and further in view of U.S. Patent No. 6,581,048 to Werbos. This rejection is respectfully traversed.

The Office Action asserts that the combination of Jacques, Raeth and Werbos discloses the subject matter recited in claims 1, 9 and 14. Applicants respectfully submit that Jacques, Raeth and Werbos, either individually or in combination, do not disclose or suggest determining at least one control system model which is more successful than at least one other model of the plurality of models in predicting the future behavior of the multiple actuator-sensor smart matter dynamic control system; or increasing a weight of the at least one more successful control system model in the plurality of control system models used to predict future behavior of the multiple actuator-sensor smart matter dynamic control system relative to a weight of the at least one other model, as recited in claim 1, and similarly recited in claims 9 and 14.

1. The Office Action acknowledges that Jacques does not disclose or suggest determining at least one control system model which is more successful than at least one other model in the plurality of models in predicting the future behavior of the multiple actuator-sensor

smart matter dynamic control system. The Office Action asserts that Raeth discloses this feature, but Applicants respectfully disagree.

Raeth discloses a system using prediction models. See paragraph [0012]. A prediction error of a prediction model may be established between actual data and data predicted by the prediction model. See paragraph [0015]. The prediction error may be expressed in the form of a range relative prediction error, which may be used to better relate the prediction error to the actual data sample range. See paragraphs [0018] - [0020]. Raeth discloses prediction error and range relative prediction error of a prediction model, but does not disclose or suggest determining whether one prediction model is more successful than another prediction model. Therefore, Raeth does not disclose or suggest determining at least one control system model which is more successful than at least one other model of the plurality of models. Thus, Raeth does not supply the subject matter lacking in Jacques.

2. The Office Action acknowledges that Jacques does not disclose or suggest increasing a weight of at least one more successful control system model relative to the at least one other model. The Office Action asserts that Werbos discloses this feature, but Applicants respectfully disagree.

Werbos discloses a model containing weights as parameters. See col. 7, lines 41-44. Werbos discloses adapting the weights so as to make the model work. See col. 7, lines 42-44, and col. 80, lines 43-50. Werbos discloses adapting weights within a model for the model to work, but does not disclose or suggest increasing the weight of one model relative to a weight of another model. Thus, Werbos does not disclose or suggest increasing a weight of the at least one more success for control system model in the plurality of control system models relative to a weight of the at least one other model. Therefore, Werbos does not supply the subject matter lacking in Jacques.

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For any of the above reasons, Jacques, Raeth and Werbos, either individually or in combination, do not disclose or suggest the subject matter recited in claims 1, 9 and 14 and claims 6, 7, 12 and 17 depending therefrom. Accordingly, withdrawal of the rejection of claims 1, 6, 7, 9, 12, 14 and 17 under 35 U.S.C. §103(a) is respectfully requested.

B. The Office Action rejects claims 2, 8, 10 and 15 under 35 U.S.C. §103(a) over Jacques in view of Raeth and further in view of Werbos and U.S. Patent No. 5,802,203 to Black et al. This rejection is respectfully traversed.

Black discloses a system which segments images into component elements by modeling the image as a series of combined layers. See col. 2, lines 16-18. Black does not disclose or suggest determining at least one control system model which is more successful than at least one other model of a plurality of models; or increasing a weight of the at least one more successful control system model relative to a weight of the at least one other model, as recited in claim 1, and similarly recited in claims 9 and 14. Thus, Black does not supply the subject matter lacking in Jacques, Raeth and Werbos.

For at least the above reason, Jacques, Raeth, Werbos and Black, either individually or in combination, do not disclose or suggest the subject matter recited in claims 1, 9 and 14, and claims 2, 8, 10 and 15 depending therefrom. Accordingly, withdrawal of the rejection of claims 2, 8, 10 and 15 under 35 U.S.C. §103(a) is respectfully requested.

C. The Office Action rejects claims 11 and 16 under 35 U.S.C. §103(a) over Jacques in view of Raeth and further in view of Werbos and U.S. Patent No. 6,361,605 to Shutic et al. This rejection is respectfully traversed.

Shutic discloses a system for applying powder coating material onto large objects. See col. 3, lines 49-61. Shutic does not disclose or suggest determining at least one control system model which is more successful than at least one other model of a plurality of models; or increasing a weight of the at least one more successful control system model in the plurality of

control system models relative to a weight of the at least one other model, as recited in claim 1, and similarly recited in claims 9 and 14. Thus, Shutic does not supply the subject matter lacking in Jacques, Raeth and Werbos.

For at least the above reason, Jacques, Raeth, Werbos and Shutic, either individually or in combination, do not disclose or suggest the subject matter recited in claims 1, 9 and 14, and claims 11 and 16 depending therefrom. Accordingly, withdrawal of the rejection of claims 11 and 16 under 35 U.S.C. §103(a) is respectfully requested.

D. The Office Action rejects claims 3-5, 13 and 18 under 35 U.S.C. §103(a) over Jacques in view of Raeth and further in view of Werbos, Black and Shutic. This rejection is respectfully traversed.

As discussed above, Black and Shutic do not supply the subject matter lacking in Jacques, Raeth and Werbos. Therefore, Jacques, Raeth, Werbos, Black and Shutic, either individually or in combination, do not disclose or suggest the subject matter recited in claims 1, 9 and 14, and claims 3-5, 13 and 18 depending therefrom. Accordingly, withdrawal of the rejection of claims 3-5, 13 and 18 under 35 U.S.C. §103(a) is respectfully requested.

**IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-18 are earnestly solicited.

Respectfully submitted,



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**Attachments:**

Amended Abstract  
Information Disclosure Statement

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